Contents

Relative performance of tool materials in ultrasonic machining. 1
M. Komaraiah and P. Narasimha Reddy (Hyderabad, India)

Investigation of the wear failure mechanism of a flour milling roller 11
Q. Luo, J. Xie (Henan, China) and W. Lu (Shaanxi, China)

Structure of repeatedly rubbed oxygen-free, high conductivity copper. 17
H. Furuichi (Kofu, Japan)

Peculiarities of LiF single-crystal deformation in Vaseline oil at elevated temperatures. 23
L. Rapoport (Holon, Israel)

The effect of progressive minor spheroidization on the dry-wear rates of a standard carbon and a Cr–Mo alloy rail steel 29
D. M. Fegredo (Ottawa, Ont., Canada), J. Kalousek (Vancouver, B.C., Canada) and M. T. Shehata (Ottawa, Ont., Canada)

Erosion and corrosion of cooled 1018 steel 41
B.-Q. Wang, G.-Q. Geng (Shaanxi, China) and A. V. Levy (Berkeley, CA, USA)

On mechanical mixing during dry sliding of aluminium–12.3wt.%silicon alloy against copper 53
C. Subramanian (The Levels, S.A., Australia)

Fractal analysis of topographic data by the patchwork method 61
C. A. Brown, P. D. Charles (Worcester, MA, USA), W. A. Johnsen (Golden, CO, USA) and S. Chesters (Countryside, IL, USA)

Friction and wear performances of detonation-gun- and plasma-sprayed ceramic and cermet hard coatings under dry friction 69
Y.-L. Wang (Tampere, Finland)

Role of the environment in electrophysical processes occurring in polymer friction 79
S. I. Guzenkov and A. F. Klimovich (Gomel, Belarus)

Ferrographic analysis of polyphenyl ether fluids 87
H. A. Smith and C. S. Saba (Dayton, OH, USA)

Lubrication of short porous journal bearings – use of the Brinkman-extended Darcy model. 93
J. R. Lin and C. C. Hwang (Chung Li, Taiwan)

Effect of microstructure and hardness on the grinding abrasive wear resistance of a ball bearing steel 105
T. Chandrasekaran and Kishore (Bangalore, India)

Environmental effects on wear behaviour of alumina. 111
M.-C. Jeng and L.-Y. Yan (Chung-Li, Taiwan)

Influence of the variation between static and kinetic friction on stick–slip instability 121
G. Capone, V. D'Agostino, S. Della Valle and D. Guida (Naples, Italy)

Wear of steels after implantation of aluminium and coimplantation of aluminium and oxygen ions 127
K. Langguth and H. Ryssel (Erlangen, Germany)

Characterization of the shape of the roughness profile ordinate distribution of honed cylinder surfaces. 135
J. Michalski and P. Pawlus (Rzeszów, Poland)

Analysis of film rupture and re-formation boundaries in a finite journal bearing with micropolar fluids. 145
T.-R. Lin (Hu-Wei, Taiwan)

Studies of Al_2O_3(p)–6061Al composites under dry sliding conditions using scanning electron microscopy, energy-dispersive spectrometry and X-ray diffractometry 155
Y. S. Chiao, F. M. Pan, C. A. Lin, J. L. Horng (Chutung, Taiwan) and S. J. Lin (Hsinchu, Taiwan)

Optimum design of bearing and seal parts for hydraulic equipment. 161
T. Kazama and A. Yamaguchi (Yokohama, Japan)

Erosive wear of low chromium white cast iron. 173
D. Z. Guo, L. J. Wang and J. Z. Li (Xian, China)

Water lubrication of polyurethane grafted with dimethylacrylamide for medical use 179
K. Ikeuchi, T. Takii, H. Norikane (Kyoto, Japan), N. Tomita (Nara, Japan), T. Ohsumi (Toyama, Japan), Y. Uyama and Y. Ikada (Kyoto, Japan)

Tribochemical characterization of the worn surface of the ternary system Cu–Ni–Zn 187
F. Honda, T. Kometani and K. Nakajima (Nagoya, Japan)

Additive properties of jojoba oil for lubricating oil formulations 193
R. P. S. Bisht, G. A. Sivasankaran and V. K. Bhatia (Dehradun, India)

Experimental study of the abrasive wear behaviour of plasma-nitrided gearing steel 199
M. B. Karamis (Kayseri, Turkey)

A dynamic concentration model for lubrication with oil-in-water emulsions 207
W. R. D. Wilson, Y. Sakaguchi and S. R. Schmid (Evanston, IL, USA)

Erosive wear of rubber by solid particles at normal incidence 213
J. C. Arnold and I. M. Hutchings (Cambridge, UK)

Notes on Contributors 223

Author Index 227

Subject Index 229